

Amendments to the Specification:

Please insert the following new section heading and new paragraph after the title of the application:

CROSS-REFERENCE TO RELATED APPLICATIONS

This is a national phase of International Patent Application PCT/EP2004/013813, which was filed December 4, 2004, and claims benefit of Germany patent application DE 10 2004 003 456.7 filed January 22, 2004. The full disclosure of these earlier applications is incorporated herein by reference.

Please insert the following new section headings on page 1, before line 1.

BACKGROUND OF THE INVENTION

1. Field of the Invention

Please delete the paragraph beginning on page 1, line 15 and ending on page 1, line 16 and insert the following new paragraph:

The invention relates to a system and a method for determining the thickness of a layer of lacquer which is applied by electrophoretic immersion coating to an article.

Please insert the following new section heading on page 1, before line 17.

2. Description of the Art

Please insert the following new paragraph on page 3, after line 9.

The present invention is directed to resolving these and other matters.

Please insert the following new section heading on page 3, before line 10.

SUMMARY OF THE INVENTION

Please replace the paragraph beginning on page 3, line 10 with the following amended paragraph:

[[The]] An object of the present invention is ~~accordingly~~ to improve the known methods and systems for determining the thickness of an electrophoretically applied layer of lacquer in such a way that the rejection rate as a result of articles that are lacquered too thinly or thickly is reduced at low cost.

Please delete the paragraph beginning on page 3, line 16 and insert the following new paragraph:

This object may be achieved by a method for determining the thickness of a layer of lacquer which is applied by electrophoretic immersion coating to an article, wherein the article for immersion coating is immersed in a lacquer immersion bath containing lacquer and generates an electrical field as an electrode with at least one counter electrode. The electrical charge flowing through the article during immersion coating and the surface of the article exposed to the lacquer are ascertained and therefrom the thickness of the layer of lacquer is determined.

Please delete the paragraph beginning on page 4, line 17 and insert the following new paragraph:

With respect to the system, the above-stated object may be achieved with a system for determining the thickness of a layer of lacquer which is applied by electrophoretic immersion coating to an article, comprising an immersion bath for receiving a lacquer in which the article can be immersed, a voltage source, of which one pole can be connected to the article and of which the other pole is connected to at least one counter electrode reaching into the immersion bath. The system further comprises means for determining the electrical charge flowing through the article during immersion coating and a computer which tunes the thickness of the layer of lacquer from the charge and the surface of the article exposed to the lacquer.

Please insert the following new paragraph on page 7, after line 14.

It is to be understood that the aspects and objects of the present invention described above may be combinable and that other advantages and aspects of the present invention will become apparent upon reading the following description of the drawings and detailed description of the invention.

Please insert the following new section heading on page 7, before line 15.

BRIEF DESCRIPTION OF THE DRAWINGS

Please insert the following new section heading and new paragraph on page 7, before line 23.

DETAILED DESCRIPTION OF THE PRESENT INVENTION

While this invention is susceptible of embodiment in many different forms, there is shown in the drawings and will herein be described in detail one or more embodiments with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiments illustrated.

Please replace the paragraph beginning on page 12, line 5 with the following amended paragraph:

The thickness of the coating which was applied cataphoretically to the vehicle body 28 during immersion coating results as the volume of deposited pigments and binder particles divided by the total surface of the vehicle body 28. It is of course assumed in this case that variations in thickness, for instance as a consequence of disturbances to the electrical field distribution, do not occur. The total area of the vehicle body 28 to be coated is determined in advance either on the basis of the construction data and supplied to the computer 34 or else is determined by the computer using the above-mentioned maximum starting current $[[I_{\max}]]$ J_{\max} , for example by using what is known as a “look-up table” in which the correlation between the starting current and the surface is stored.

Please insert the following new paragraph on page 16, after line 11.

It is to be understood that additional embodiments of the present invention described herein may be contemplated by one of ordinary skill in the art and that the scope of the present invention is not limited to the embodiments disclosed. While specific embodiments of the present invention have been illustrated and described, numerous modifications come to mind without significantly departing from the spirit of the invention, and the scope of protection is only limited by the scope of the accompanying claims.

Please replace the Abstract with the following amended paragraph:

ABSTRACT

The invention relates to electrophoretic immersion lacquering of objects, e.g. the bodies of automotive vehicles $[(28)]$, wherein the object which is to be lacquered $[(28)]$ is immersed into lacquer immersion basin $[(12)]$ containing a lacquer fluid $[(14)]$. An electric field is produced by the object $[(28)]$ in its capacity as an electrode with at least one counter electrode ~~(16, 18)~~. In order to determine the thickness of the lacquer layer applied in said manner, the electric charge flowing through the object $[(28)]$ during the immersion lacquering process and the surface of the object $[(28)]$ exposed to the lacquer fluid are determined in order to determine the thickness of the lacquer layer therefrom. The thickness of the lacquer coating can thus be determined during the immersion lacquering process, resulting in fewer rejects